

**OPTICAL PROBE FOR DETERMINING
THE FAT/LEAN INTERFACE IN CUTS OF MEAT**

ABSTRACT OF THE DISCLOSURE

5 An apparatus and method for locating the boundary surface between a layer of fatty
tissue and lean tissue in a cut of meat, such as beef, such as slabs of meat undergoing trimming
and cutting in commercial meat processing facilities. The invention exploits the fact that fatty
tissue and lean tissue have significantly different responses to incident light energy. By
gauging the degree to which a generated beam of light is scattered and reflected by the tissues
10 under evaluation, the invention permits the character of the tissue to be ascertained. An
incident beam of light, such as green light, is generated and transmitted to a probe tip, which
tip is inserted into the cut of meat under investigation. The light beam is emitted into the meat
tissues from the probe tip, and then is scattered and reflected by the tissues, whereupon some
fraction of the emitted light returns to the probe tip. The returning light energy is transmitted
15 to a detector; relative changes in the returning light transmitted to the detector permit the
operator to determine when the probe tip is approaching or penetrating the fat/lean tissue
interface.